

than 3,000 L (793 gallons) and not less than 450 L (119 gallons).

[75 FR 5397, Feb. 2, 2010, as amended at 75 FR 60339, Sept. 30, 2010]

**§ 178.935 Standards for wooden Large Packagings.**

(a) The provisions in this section apply to wooden Large Packagings intended to contain solids. Wooden Large Packaging types are designated:

- (1) 50C natural wood.
- (2) 50D plywood.
- (3) 50F reconstituted wood.

(b) Construction requirements for wooden Large Packagings are as follows:

(1) The strength of the materials used and the method of construction must be appropriate to the capacity and intended use of the Large Packagings.

(i) Natural wood used in the construction of Large Packagings must be well-seasoned, commercially dry and free from defects that would materially lessen the strength of any part of the Large Packagings. Each Large Packaging part must consist of uncut wood or a piece equivalent in strength and integrity. Large Packagings parts are equivalent to one piece when a suitable method of glued assembly is used (*i.e.*, a Lindermann joint, tongue and groove joint, ship, lap or babbet joint; or butt joint with at least two corrugated metal fasteners at each joint, or when other methods at least equally effective are used).

(ii) Plywood used in construction must be at least 3-ply. Plywood must be made of well-seasoned rotary cut, sliced or sawn veneer, commercially dry and free from defects that would materially lessen the strength of the Large Packagings. All adjacent piles must be glued with water resistant adhesive. Materials other than plywood may be used for the construction of the Large Packaging.

(iii) Reconstituted wood used in the construction of Large Packagings must be water resistant reconstituted wood such as hardboard, particle board or other suitable type.

(iv) Wooden Large Packagings must be firmly nailed or secured to corner posts or ends or be assembled by similar devices.

(2) *Integral and detachable pallets.* (i) Any integral pallet base forming part of a Large Packaging, or any detachable pallet must be suitable for mechanical handling of a Large Packaging filled to its maximum permissible gross mass.

(ii) The pallet or integral base must be designed to avoid protrusion that may cause damage to the Large Packaging in handling.

(iii) The body must be secured to any detachable pallet to ensure stability in handling and transportation. Where a detachable pallet is used, its top surface must be free from protrusions that might damage the Large Packaging.

(3) Strengthening devices, such as timber supports to increase stacking performance, may be used but must be external to the liner.

(4) The load bearing surfaces of the Large Packaging must be designed to distribute loads in a stable manner.

(c) Wooden Large Packagings:

(1) May not have a volumetric capacity greater than 3,000 L (793 gallons); and

(2) May not have a volumetric capacity less than 450 L (119 gallons).

**§ 178.940 Standards for flexible Large Packagings.**

(a) The provisions in this section apply to flexible Large Packagings intended to contain liquids and solids. Flexible Large Packagings types are designated:

- (1) 51H flexible plastics.
- (2) 51M flexible paper.

(b) Construction requirements for flexible Large Packagings are as follows:

(1) The strength of the material and the construction of the flexible Large Packagings must be appropriate to its capacity and its intended use.

(2) All materials used in the construction of flexible Large Packagings of types 51M must, after complete immersion in water for not less than 24 hours, retain at least 85 percent of the tensile strength as measured originally on the material conditioned to equilibrium at 67 percent relative humidity or less.

(3) Seams must be stitched or formed by heat sealing, gluing or any equivalent method. All stitched seam-ends must be secured.

(4) In addition to conformance with the requirements of §173.24 of this subchapter, flexible Large Packaging must be resistant to aging and degradation caused by ultraviolet radiation.

(5) For plastic flexible Large Packagings, if necessary, protection against ultraviolet radiation must be provided by the addition of pigments or inhibitors such as carbon black. These additives must be compatible with the contents and remain effective throughout the life of the Large Packaging. Where use is made of carbon black, pigments or inhibitors other than those used in the manufacture of the tested design type, retesting may be omitted if the carbon black content, the pigment content or the inhibitor content do not adversely affect the physical properties of the material of construction.

(6) Additives may be included in the composition of the material of the Large Packaging to improve the resistance to aging, provided they do not adversely affect the physical or chemical properties of the material.

(7) When flexible material Large Packagings are filled, the ratio of height to width must be no more than 2:1.

(c) Flexible Large Packagings:

(1) May not have a volumetric capacity greater than 3,000 L (793 gallons);

(2) May not have a volumetric capacity less than 56 L (15 gallons); and

(3) Must be designed and tested to a capacity of not less than 50 kg (110 pounds).

### Subpart Q—Testing of Large Packagings

SOURCE: 75 FR 5400, Feb. 2, 2010, unless otherwise noted.

#### § 178.950 Purpose and scope.

This subpart prescribes certain testing requirements for Large Packagings identified in subpart P of this part.

#### § 178.955 General requirements.

(a) *General.* The test procedures prescribed in this subpart are intended to ensure that Large Packagings con-

taining hazardous materials can withstand normal conditions of transportation. These test procedures are considered minimum requirements. Each packaging must be manufactured and assembled so as to be capable of successfully passing the prescribed tests and to conform to the requirements of §173.24 of this subchapter while in transportation.

(b) *Responsibility.* The Large Packaging manufacturer is responsible for ensuring each Large Packaging is capable of passing the prescribed tests. To the extent a Large Packaging's assembly function, including final closure, is performed by the person who offers a hazardous material for transportation, that person is responsible for performing the function in accordance with §§173.22 and 178.2 of this subchapter.

(c) *Definitions.* For the purpose of this subpart:

(1) *Large packaging design type* refers to a Large Packaging which does not differ in structural design, size, material of construction and packing.

(2) *Design qualification testing* is the performance of the drop, stacking, and bottom-lift or top-lift tests, as applicable, prescribed in this subpart, for each different Large Packaging design type, at the start of production of that packaging.

(3) *Periodic design requalification test* is the performance of the applicable tests specified in paragraph (c)(2) of this section on a Large Packaging design type, to requalify the design for continued production at the frequency specified in paragraph (e) of this section.

(4) *Production inspection* is the inspection, which must initially be conducted on each newly manufactured Large Packaging.

(5) *Different Large Packaging design type* is one which differs from a previously qualified Large Packaging design type in structural design, size, material of construction, wall thickness, or manner of construction, but does not include:

(i) A packaging which differs in surface treatment;

(ii) A rigid plastic Large Packaging, which differs with regard to additives used to comply with §178.925(b) or §178.940(b);